jatim.bps.go.id, Sidoarjo is the second city after Surabaya which has a number of large and medium industrial companies in province of east java, there is more than 978 large and medium industrial companies in 2015 in Sidoarjo with this type of capital-intensive investment. Which capital-intensive investment is more dependent on automated equipment from human labor. capital-intensive investment leads companies to find maximum profits by reducing production costs by substituting human resources with advanced technology that is considered more efficient, so the consequences of labor absorption tend to be low. The[illegible]ting capital-intensive [illegible]investments because [illegible]

To[illegible] investment and emp[illegible]urchase of sophistica[illegible]tic financial waste an[illegible]job creation growth. S[illegible] Table 4.5 it can be se[illegible].018, which means th[illegible]0.018%.

Table 4.12 The Realization of Investment and Labor in Sidoarjo

Year 2010-2015

Year	Total Investment (Rp)	Labor Force (people)
2011	5.317.069.887.627	957.899

2012	13.643.652.680.271	957.887
2013	13.382.899.929.007	996.960
2014	14.075.586.971.410	1.028.243
2015	16.633.790.294.008	1.015.208

Source: Central Bureau Statistics Sidoarjo 2010-2015

Based on this table, in the period of 2011-2015 investment in Sidoarjo from year to year experienced an increase, with details in 2011 the total investment received Rp. 5.317.069.887.627 by absorbing labor as 957.899 people and in 2012 the investment value experienced a significant increase to Rp. 13.643.652.680.271 with a absorbing labor as 957.887 people. Furthermore, in 2013 to 2015 the total investment always experienced a periodic increase, with details that in 2013, the investments is Rp. 13.382.899.929.007 and absorb the laabor as 996,960 people. While in 2014, the amount of investment reached Rp. 14.075.586.971.410 by absorbing labor as 1.028.243 people and in 2015 the total investment is Rp. 16.633.790.294.008 with a labor absorption as 1.015.208 people.

In this context that what needs to be observed by policymakers is a process of new investment and an expansion of investment on the investments that have been made previously. When the target of employment is a priority, investment must not be in the form of assets, but better with the type of the labor capital. Additional capital needs to be formulated as an effort must be positive to reduce the unemployment problem.

4.6.2 The Effect of Inflation (X_2) on Labor Absorption

The results of this study indicate that inflation has not significant on labor absorption in Sidoarjo with a positive coefficient 0.002 and a probability of 0.315>0.05. When there is an increase in one unit, it will give a decrease in labor absorption by 0.002. These results indicate that this is in accordance with the research hypothesis that inflation has an effect on labor absorption. This not significant, it is because the annual inflation rate is inversely proportional to the absorption of labor in each year, as the continued increase in prices will increase the company's production costs, which in turn will increase the price of goods. The results of this study are in accordance with previous researches Indradewa and Natha (2015) which shows the level of inflation has a negative influence on labor absorption. Because in his research, the results obtained were not significant with coefficients that are likely to be spurius, because there seems to be a trend on labor absorption because inflation occurs more frequently in consumer goods and the average inflation that occurred during the period, inflation is at moderate inflation, so that such inflation rates has a very small influence on labor absorption.

According to A. W Philips that the relationship between inflation and unemployment which is nothing but the opposite of labor absorption. Say inflation can have an impact on employment opportunities, it means that increasing inflation rate can result in the decrease of labor absorption and conversely, the decrease of inflation rate can increase labor absorption.

Table 4.13 Inflation and Unemployment Rate in Sidoarjo

Year 2012-2015

Year	Inflation (%)	Open Unemployment Rate (%)
2012	4,01	5,37
2013	7,72	4,12
2014	7,67	3,88
2015	3,2	6,30
Avarage	5,65	4,9

Source: Central Bureau Statistics Sidoarjo 2012-2015

From table 4.13 shows that if the inflation rate increases, the unemployment rate will decrease. And in this case, it can be said that when the relationship of inflation rises and unemployment falls, the level of labor absorption will increases.

In this case, that policy makers need to work together to keep inflation under reasonable control. Increase in raw materials or other items that trigger inflation will adversely impact on employment. Because, based on this study, the inflation variable has an effect on labor absorption. Maintained inflation will benefit the seller, and remain in a position that is not detrimental to employment.

4.6.3 The Effect of District Minimum Wage (X_3) on Labor Absorption

The results showed that the district minimum wage has a significantly effect on employment, with the estimation results in table 4.5 shows that the coefficients of the variable district minimum wage is 0.103 with a probability value of 0.00 <0.05. This is because the balance of labor in demand and supply in Sidoarjo Regency applies, so that the increase or decrease in wages set by the government has an impact on labor absorption. This means that wage levels

increase the labor market so that the number of labor offers also increases. So, if there is a 1% increase, it will increase employment by 0.103%. The results of this study are in accordance with Chusna (2013) which says that there is a positive and significant relationship between the minimum wage with the absorption of labor. The increase in wages has a significant effect on labor absorption, due to the implementation of regional autonomy with the existence of Government Regulation Number: 25 2000 dated May 6, 2000 concerning the Authority of the Government and the Province As an autonomous region, the determination of the minimum wage is carried out by the government to restrain the decline in wage rates, especially for lower level workers. In other words, minimum wages are a safety net so that the wage level is not lower in the network. On the other hand the government gives the freedom to regulate wages that are above the minimum wage

According to Izatun (2015), the relationship between the wage rate and the supply of individual labor differs from the relationship between the wage rate and the labor supply as a whole. The relationship between the wage rate and individual labor supply after a certain wage rate, with rising wage rates, will not encourage someone to work longer or harder because of on that level the income is relatively high and people want to live more relaxed. But the economy as a whole, the higher wage rates will encourage more people to enter the labor market. People who initially do not want to work at a low wage rate, will be willing to work and look for jobs at higher wages.

The changes in the wage rate will give the impact to the cost of company. If it is assumed that the wage rate is increase, so the increase of production costs will lead to an increase in the price of each unit of goods in production, so this makes consumers to reduce their consumption or even not buying product at all

as the price is too high. Consequently, producers will be forced to reduce the amount of production due to the number of unsold goods which this action is called scale effect. According to Law no. 13 of 2003 chapter X governing the remuneration. In article 89, paragraph 1 regulates minimum wages based on provincial or regency / city territory. Article 90 paragraph 1 regulates the entrepreneur is prohibited from paying wages lower than the minimum wage.

In this context, the demand for labor is influenced by changes in wage rates because the amount of the district minimum wage is a magnet for job seekers in their respective regions. The higher the minimum wage, will trigger an increase in employment. Therefore, it can be concluded that the relationship between district's minimum wages and employment has two sides of policy makers must pay attention to the continuity in determining the amount of the district minimum wage because it should not reduce the interest of job seekers. On the other hand, minimum wages must also be aimed at increasing labor productivity so that there will be a balance between costs and profit to attract the investors.

4.6.4 The Effect of Education (X_4) on Labor Absorption

The results showed that education has a significantly effect on labor absorption, with the estimation results in table 4.5 shows the coefficient of education variable is 0.044 with a probability of 0.00 <0.05. Which means that every increase in the number of high school students who graduate will increase employment by 0.04% in each sub-district in Sidoarjo. This is because education is a valuable investment, for economic growth. People who get higher education tend to get better jobs than those who do not have education. The highest level of education that was saved in this study was the population of high school graduates in Sidoarjo from 2002-2017. The results of this study are in

accordance with Kadafi (2013) that education has a positive and significant relationship with employment. Based on his research, The level of education has a dominant influence on labor absorption, this encourages companies to improve the quality of employee recruitment based on education level.

This result is also supported with the theory, which is according to Simanjuntak (2001), educated workers usually have higher productivity than uneducated labor. Workforce productivity is basically reflected in wage rates, every job vacancy is generally always associated with educational level requirements for candidates who will fill it. And another theory is that new growth theory emphasizes the importance of the role of government, especially in enhancing capital development (human capital). Human capital in economic terminology is used for education and other human capacities. Education plays a key role in a country's economic progress. Education is a tool for adopting modern technology, so that it can increase production capacity in the economy (Todaro 2002).

This cases, that educated people are more easily absorbed into employment than those who do not have education. The more people who graduate with higher education, will have a negative and positive impact. Positive if there are job opportunities that exist, can compensate for the increase in graduates of a high level of education. It will be negative, if only the graduates increase, but the employment opportunities do not increase or even decrease.

CHAPTER V

CONCLUSION AND SUGGESTION.

5.1 Conclusion

Based on the results of the analysis and discussion presented in the previous chapter, it can be concluded as follows:

1. The results of this study show that investment has not significantly effect on labor absorption in Sidoarjo. This is because the type of investment in Sidoarjo tends to be capital-intensive which is more using machine power than the human labor, so the company only employs few *workers.*
2. The results of this study show that inflation has not significantly effect on labor absorption in Sidoarjo. The annual inflation rate is inversely proportional to the absorption of manpower in every year, as the continuous increase in prices will increase the company's production costs, which will further increase the price per unit of manufactured goods.
3. District's Minimum Wage has a significantly effect on labor absorption in Sidoarjo. The balance of labor supply and demand prevails in sidoarjo, so the increasing or decreasing wage that set by the government has an impact on employment absorption.
4. Education has a significantly effect on labor absorption in Sidoarjo. This show that the more people is educated, people will be absorbed more easily than uneducated people.

5.2 Suggestion

1. To absorb more labor to reduce the unemployment problem, the government should be more selective in giving investors permits, where

the government is more directing the investment to the labor-intensive sector, because a labor intensive approach relies more on human labor than it does on real capital/machine.

2. The local government in terms of fixing distric's minimum wage at this time let say is quite appropriate. Hopefully, If the government continues increasing the minimum wage policy while improving the welfare.
3. It is hoped that the government can always provide the right policies to maintain the stability of the inflation rate so as not to give adverse effects and harm any party.
4. The government better pay attention to education and rearrange the entire education system to be more tailored to the needs with existing jobs, so it does not happen on the issue of education-job mismatch. Based on this there is need for the government to examine the labour market situation of the various jobs and regulate student registration accordingly. The government should also start initiate on targeted employability application such as labour market information that is, providing students at a very early stage of their career with information about career opportunities which will enable them to reflect on their personal choices based on their skill and passion.
5. The next research is suggested to conduct further research on this topic to identify other variables which can affect on labor absorption in Sidoarjo.

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APPENDIX

18 Sidoarjo Distric's	Year	Y	X1	X2	X3	X4
Sidoarjo	2002	11,238	26,545	9,45	13,024	8,645
	2003	11,189	27,523	4,45	13,155	8,627
	2004	11,173	27,513	5,49	13,218	8,627
	2005	11,252	27,518	5,79	13,268	8,628
	2006	11,231	27,807	5,93	13,393	8,628
	2007	11,204	28,653	7,75	13,519	8,628
	2008	11,306	29,036	9,8	13,595	8,628
	2009	11,343	28,527	3,98	13,769	8,628
	2010	11,481	29,188	6,6	13,822	10,899
	2011	11,481	29,302	4,01	13,917	11,082
	2012	11,477	30,244	4,01	14,040	10,931
	2013	11,517	30,225	7,72	14,358	11,111
	2014	11,550	30,275	7,67	14,599	11,198
	2015	11,540	30,442	3,16	14,811	11,223
	2016	11,587	30,464	6,78	14,927	11,249
	2017	11,576	30,478	7,12	15,007	11,276
Buduran	2002	10,347	26,545	9,45	13,024	7,891
	2003	10,300	27,523	4,45	13,155	7,922
	2004	10,288	27,513	5,49	13,218	8,975
	2005	10,365	27,518	5,79	13,268	8,269
	2006	10,437	27,807	5,93	13,393	8,350
	2007	10,444	28,653	7,75	13,519	8,414
	2008	10,461	29,036	9,8	13,595	8,422
	2009	10,526	28,527	3,98	13,769	8,422
	2010	10,613	29,188	6,6	13,822	10,179
	2011	10,688	29,302	4,01	13,917	10,259
	2012	10,690	30,244	4,01	14,040	10,143
	2013	10,733	30,225	7,72	14,358	10,334
	2014	10,770	30,275	7,67	14,599	10,676
	2015	10,762	30,442	3,16	14,811	10,720
	2016	10,812	30,464	6,78	14,927	10,877
	2017	10,804	30,478	7,12	15,007	10,921
Candi	2002	10,653	26,545	9,45	13,024	8,427
	2003	10,620	27,523	4,45	13,155	9,653
	2004	10,728	27,513	5,49	13,218	10,105
	2005	10,821	27,518	5,79	13,268	9,822
	2006	10,827	27,807	5,93	13,393	10,148
	2007	10,892	28,653	7,75	13,519	10,262
	2008	10,935	29,036	9,8	13,595	10,262
	2009	10,946	28,527	3,98	13,769	10,262

	2010	10,956	29,188	6,6	13,822	10,505
	2011	11,104	29,302	4,01	13,917	10,633
	2012	11,118	30,244	4,01	14,040	10,571
	2013	11,164	30,225	7,72	14,358	10,724
	2014	11,203	30,275	7,67	14,599	10,695
	2015	11,199	30,442	3,16	14,811	10,726
	2016	11,252	30,464	6,78	14,927	10,784
	2017	11,246	30,478	7,12	15,007	10,820
Porong	2002	10,495	26,545	9,45	13,024	9,748
	2003	10,444	27,523	4,45	13,155	9,006
	2004	10,427	27,513	5,49	13,218	9,013
	2005	10,432	27,518	5,79	13,268	9,013
	2006	10,409	27,807	5,93	13,393	9,013
	2007	10,441	28,653	7,75	13,519	9,013
	2008	10,506	29,036	9,8	13,595	9,149
	2009	10,527	28,527	3,98	13,769	9,149
	2010	10,603	29,188	6,6	13,822	9,957
	2011	10,657	29,302	4,01	13,917	9,992
	2012	10,641	30,244	4,01	14,040	10,094
	2013	10,660	30,225	7,72	14,358	10,019
	2014	10,671	30,275	7,67	14,599	10,108
	2015	10,634	30,442	3,16	14,811	10,123
	2016	10,657	30,464	6,78	14,927	9,963
	2017	10,621	30,478	7,12	15,087	10,188
Krembung	2002	10,327	26,545	9,45	13,024	8,682
	2003	10,263	27,523	4,45	13,155	8,682
	2004	10,233	27,513	5,49	13,218	9,200
	2005	10,247	27,518	5,79	13,268	9,200
	2006	10,217	27,807	5,93	13,393	9,200
	2007	10,179	28,653	7,75	13,519	9,200
	2008	10,283	29,036	9,8	13,595	9,200
	2009	10,268	28,527	3,98	13,769	9,200
	2010	10,412	29,188	6,6	13,822	9,740
	2011	10,380	29,302	4,01	13,917	9,775
	2012	10,383	30,244	4,01	14,040	9,836
	2013	10,423	30,225	7,72	14,358	9,908
	2014	10,448	30,275	7,67	14,599	10,215
	2015	10,435	30,442	3,16	14,811	10,235
	2016	10,478	30,464	6,78	14,927	10,275
	2017	10,464	30,478	7,12	15,087	10,308
Tulangan	2002	10,557	26,545	9,45	13,024	8,924
	2003	10,500	27,523	4,45	13,155	9,026
	2004	10,476	27,513	5,49	13,218	9,026

	2005	10,499	27,518	5,79	13,268	9,026
	2006	10,479	27,807	5,93	13,393	9,057
	2007	10,474	28,653	7,75	13,519	9,103
	2008	10,470	29,036	9,8	13,595	9,346
	2009	10,456	28,527	3,98	13,769	9,346
	2010	10,547	29,188	6,6	13,822	10,099
	2011	10,654	29,302	4,01	13,917	10,162
	2012	10,664	30,244	4,01	14,040	10,117
	2013	10,713	30,225	7,72	14,358	10,239
	2014	10,752	30,275	7,67	14,599	10,269
	2015	10,748	30,442	3,16	14,811	10,308
	2016	10,801	30,464	6,78	14,927	10,339
	2017	10,796	30,478	7,12	15,087	10,357
Tanggulangin	2002	10,569	26,545	9,45	13,024	9,134
	2003	10,603	27,523	4,45	13,155	9,134
	2004	10,744	27,513	5,49	13,218	9,157
	2005	10,770	27,518	5,79	13,268	9,157
	2006	10,757	27,807	5,93	13,393	9,168
	2007	10,729	28,653	7,75	13,519	9,183
	2008	10,760	29,036	9,8	13,595	9,187
	2009	10,749	28,527	3,98	13,769	9,187
	2010	10,887	29,188	6,6	13,822	10,208
	2011	10,826	29,302	4,01	13,917	10,323
	2012	10,812	30,244	4,01	14,040	10,265
	2013	10,837	30,225	7,72	14,358	10,353
	2014	10,849	30,275	7,67	14,599	10,377
	2015	10,817	30,442	3,16	14,811	10,398
	2016	10,844	30,464	6,78	14,927	10,514
	2017	10,813	30,478	7,12	15,087	10,594
Jabon	2002	10,164	26,545	9,45	13,024	8,466
	2003	10,087	27,523	4,45	13,155	8,469
	2004	10,059	27,513	5,49	13,218	8,872
	2005	10,064	27,518	5,79	13,268	9,026
	2006	10,033	27,807	5,93	13,393	8,757
	2007	10,016	28,653	7,75	13,519	8,968
	2008	10,119	29,036	9,8	13,595	9,056
	2009	10,103	28,527	3,98	13,769	9,056
	2010	10,240	29,188	6,6	13,822	9,281
	2011	10,229	29,302	4,01	13,917	9,382
	2012	10,215	30,244	4,01	14,040	9,669
	2013	10,242	30,225	7,72	14,358	9,408
	2014	10,259	30,275	7,67	14,599	9,720
	2015	10,239	30,442	3,16	14,811	9,740

	2016	10,275	30,464	6,78	14,927	9,777
	2017	10,254	30,478	7,12	15,087	9,848
Krian	2002	10,776	26,545	9,45	13,024	9,491
	2003	10,732	27,523	4,45	13,155	9,464
	2004	10,712	27,513	5,49	13,218	9,823
	2005	10,747	27,518	5,79	13,268	9,232
	2006	10,733	27,807	5,93	13,393	9,895
	2007	10,715	28,653	7,75	13,519	9,936
	2008	10,800	29,036	9,8	13,595	8,911
	2009	10,780	28,527	3,98	13,769	8,911
	2010	10,867	29,188	6,6	13,822	10,338
	2011	10,946	29,302	4,01	13,917	10,375
	2012	10,952	30,244	4,01	14,040	8,103
	2013	10,997	30,225	7,72	14,358	10,447
	2014	11,033	30,275	7,67	14,599	10,481
	2015	11,025	30,442	3,16	14,811	10,509
	2016	11,074	30,464	6,78	14,927	10,564
	2017	11,065	30,478	7,12	15,087	10,572
Balongbendo	2002	10,427	26,545	9,45	13,024	9,380
	2003	10,399	27,523	4,45	13,155	9,460
	2004	10,377	27,513	5,49	13,218	9,568
	2005	10,385	27,518	5,79	13,268	9,573
	2006	10,362	27,807	5,93	13,393	9,577
	2007	10,333	28,653	7,75	13,519	9,587
	2008	10,332	29,036	9,8	13,595	9,627
	2009	10,283	28,527	3,98	13,769	9,627
	2010	10,332	29,188	6,6	13,822	9,813
	2011	10,451	29,302	4,01	13,917	9,864
	2012	10,436	30,244	4,01	14,040	9,889
	2013	10,479	30,225	7,72	14,358	9,918
	2014	10,509	30,275	7,67	14,599	10,052
	2015	10,495	30,442	3,16	14,811	10,071
	2016	10,538	30,464	6,78	14,927	10,116
	2017	10,524	30,478	7,12	15,087	10,152
Wonoayu	2002	10,482	26,545	9,45	13,024	8,171
	2003	10,455	27,523	4,45	13,155	8,253
	2004	10,451	27,513	5,49	13,218	8,253
	2005	10,470	27,518	5,79	13,268	8,253
	2006	10,458	27,807	5,93	13,393	8,253
	2007	10,436	28,653	7,75	13,519	8,253
	2008	10,385	29,036	9,8	13,595	8,253
	2009	10,381	28,527	3,98	13,769	8,253
	2010	10,465	29,188	6,6	13,822	9,798

	2011	10,534	29,302	4,01	13,917	9,816
	2012	10,532	30,244	4,01	14,040	9,986
	2013	10,574	30,225	7,72	14,358	9,872
	2014	10,605	30,275	7,67	14,599	9,876
	2015	10,593	30,442	3,16	14,811	9,883
	2016	10,639	30,464	6,78	14,927	9,892
	2017	10,626	30,478	7,12	15,087	9,913
Tarik	2002	10,367	26,545	9,45	13,024	8,343
	2003	10,320	27,523	4,45	13,155	7,866
	2004	10,297	27,513	5,49	13,218	7,891
	2005	10,306	27,518	5,79	13,268	7,893
	2006	10,285	27,807	5,93	13,393	7,893
	2007	10,265	28,653	7,75	13,519	7,893
	2008	10,244	29,036	9,8	13,595	7,893
	2009	10,164	28,527	3,98	13,769	7,893
	2010	10,260	29,188	6,6	13,822	9,494
	2011	10,355	29,302	4,01	13,917	9,627
	2012	10,345	30,244	4,01	14,040	9,799
	2013	10,383	30,225	7,72	14,358	9,687
	2014	10,409	30,275	7,67	14,599	9,838
	2015	10,392	30,442	3,16	14,811	9,842
	2016	10,433	30,464	6,78	14,927	9,867
	2017	10,416	30,478	7,12	15,087	9,910
Prambon	2002	10,440	26,545	9,45	13,024	8,186
	2003	10,382	27,523	4,45	13,155	8,291
	2004	10,357	27,513	5,49	13,218	8,291
	2005	10,364	27,518	5,79	13,268	8,328
	2006	10,336	27,807	5,93	13,393	7,909
	2007	10,314	28,653	7,75	13,519	7,044
	2008	10,370	29,036	9,8	13,595	7,044
	2009	10,386	28,527	3,98	13,769	7,044
	2010	10,466	29,188	6,6	13,822	9,756
	2011	10,513	29,302	4,01	13,917	9,871
	2012	10,503	30,244	4,01	14,040	9,956
	2013	10,541	30,225	7,72	14,358	9,936
	2014	10,569	30,275	7,67	14,599	10,013
	2015	10,552	30,442	3,16	14,811	10,053
	2016	10,594	30,464	6,78	14,927	10,096
	2017	10,577	30,478	7,12	15,087	10,153
Taman	2002	11,284	26,545	9,45	13,024	9,898
	2003	11,238	27,523	4,45	13,155	9,922
	2004	11,221	27,513	5,49	13,218	9,953
	2005	11,242	27,518	5,79	13,268	9,961

	2006	11,228	27,807	5,93	13,393	10,006
	2007	11,510	28,653	7,75	13,519	10,006
	2008	11,329	29,036	9,8	13,595	10,006
	2009	11,346	28,527	3,98	13,769	10,006
	2010	11,499	29,188	6,6	13,822	10,891
	2011	11,508	29,302	4,01	13,917	11,138
	2012	11,513	30,244	4,01	14,040	10,966
	2013	11,553	30,225	7,72	14,358	11,203
	2014	11,586	30,275	7,67	14,599	11,210
	2015	11,573	30,442	3,16	14,811	11,220
	2016	11,619	30,464	6,78	14,927	11,224
	2017	11,606	30,478	7,12	15,087	11,227
Waru	2002	11,387	26,545	9,45	13,024	10,363
	2003	11,330	27,523	4,45	13,155	10,488
	2004	11,311	27,513	5,49	13,218	10,556
	2005	11,333	27,518	5,79	13,268	10,556
	2006	11,323	27,807	5,93	13,393	10,556
	2007	11,351	28,653	7,75	13,519	10,556
	2008	11,374	29,036	9,8	13,595	10,556
	2009	11,387	28,527	3,98	13,769	10,556
	2010	11,528	29,188	6,6	13,822	10,722
	2011	11,555	29,302	4,01	13,917	11,185
	2012	11,555	30,244	4,01	14,040	11,009
	2013	11,593	30,225	7,72	14,358	11,234
	2014	11,623	30,275	7,67	14,599	11,314
	2015	11,609	30,442	3,16	14,811	11,314
	2016	11,654	30,464	6,78	14,927	11,306
	2017	11,640	30,478	7,12	15,087	11,317
Gedangan	2002	10,681	26,545	9,45	13,024	8,447
	2003	10,640	27,523	4,45	13,155	8,447
	2004	10,638	27,513	5,49	13,218	7,653
	2005	10,716	27,518	5,79	13,268	7,653
	2006	10,711	27,807	5,93	13,393	7,653
	2007	10,705	28,653	7,75	13,519	8,041
	2008	10,775	29,036	9,8	13,595	9,472
	2009	10,826	28,527	3,98	13,769	9,472
	2010	10,921	29,188	6,6	13,822	10,342
	2011	10,968	29,302	4,01	13,917	10,576
	2012	10,961	30,244	4,01	14,040	10,415
	2013	11,000	30,225	7,72	14,358	10,606
	2014	11,031	30,275	7,67	14,599	10,665
	2015	11,017	30,442	3,16	14,811	10,675
	2016	11,061	30,464	6,78	14,927	10,677

	2017	11,047	30,478	7,12	15,087	10,679
Sedati	2002	10,467	26,545	9,45	13,024	8,921
	2003	10,413	27,523	4,45	13,155	8,921
	2004	10,400	27,513	5,49	13,218	8,921
	2005	10,418	27,518	5,79	13,268	8,921
	2006	10,402	27,807	5,93	13,393	9,349
	2007	10,456	28,653	7,75	13,519	9,349
	2008	10,528	29,036	9,8	13,595	9,349
	2009	10,550	28,527	3,98	13,769	9,349
	2010	10,644	29,188	6,6	13,822	9,757
	2011	10,700	29,302	4,01	13,917	10,218
	2012	10,712	30,244	4,01	14,040	10,165
	2013	10,760	30,225	7,72	14,358	10,307
	2014	10,802	30,275	7,67	14,599	10,315
	2015	10,799	30,442	3,16	14,811	10,341
	2016	10,854	30,464	6,78	14,927	10,351
	2017	10,851	30,478	7,12	15,087	10,363
Sukodono	2002	10,439	26,545	9,45	13,024	8,981
	2003	10,407	27,523	4,45	13,155	8,981
	2004	10,386	27,513	5,49	13,218	8,981
	2005	10,410	27,518	5,79	13,268	8,981
	2006	10,403	27,807	5,93	13,393	11,162
	2007	10,525	28,653	7,75	13,519	11,176
	2008	10,638	29,036	9,8	13,595	11,245
	2009	10,638	28,527	3,98	13,769	11,245
	2010	10,766	29,188	6,6	13,822	10,180
	2011	10,868	29,302	4,01	13,917	10,393
	2012	10,882	30,244	4,01	14,040	10,335
	2013	10,933	30,225	7,72	14,358	10,470
	2014	10,973	30,275	7,67	14,599	10,499
	2015	10,967	30,442	3,16	14,811	10,526
	2016	11,019	30,464	6,78	14,927	10,538
	2017	11,012	30,478	7,12	15,087	10,551

Panel Regression Appendix

Random Effect Model

Dependent Variable: Y

Method: Panel EGLS (Cross-section random effects)

Date: 04/02/18 Time: 08:57

Sample: 2002 2017

Periods included: 16

Cross-sections included: 18

Total panel (balanced) observations: 288

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.301012	0.122580	67.71897	0.0000
X1	0.018548	0.009680	1.916213	0.0563
X2	0.002302	0.002289	1.005534	0.3155
X3	0.103680	0.018731	5.535058	0.0000
X4	0.044085	0.008756	5.034893	0.0000

Effects Specification	S.D.	Rho
Cross-section random	0.239649	0.9128
Idiosyncratic random	0.074058	0.0872

Weighted Statistics

R-squared	0.703392	Mean dependent var	0.825906
Adjusted R-squared	0.699200	S.D. dependent var	0.140337
S.E. of regression	0.076968	Sum squared resid	1.676522
F-statistic	167.7807	Durbin-Watson stat	0.431112
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.168508	Mean dependent var	10.72222

Sum squared resid	**37.99621**	**Durbin-Watson stat**	**0.019022**

Panel Regression Model Selection

Lagrange Multiplier Tests for Random Effects

Null hypotheses: No effects

Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives

	Test Hypothesis		
	Cross-section	**Time**	**Both**
Breusch-Pagan	**1157.106**	**3.913574**	**1161.019**
	(0.0000)	**(0.0479)**	**(0.0000)**
Honda	**34.01626**	**-1.978275**	**22.65427**
	(0.0000)	**--**	**(0.0000)**
King-Wu	**34.01626**	**-1.978275**	**21.84744**
	(0.0000)	**--**	**(0.0000)**
Standardized Honda	**35.48973**	**-1.449268**	**21.18741**
	(0.0000)	**--**	**(0.0000)**
Standardized King-Wu	**35.48973**	**-1.449268**	**20.37097**
	(0.0000)	**--**	**(0.0000)**
Gourierioux, et al.*	**--**	**--**	**1157.106**

(< 0.01)

Correlated Random Effects - Hausman Test

Equation: EST

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	**0.000000**	**4**	**1.0000**